WW II Nomenclature Systems

Part one of two parts

by Ray Mote, W6RIC
3610 Oarfish Lane
Oxnard, CA 93035-1320
Internet - rmote@rain.org

1. Introduction

Like many of you, I have struggled for years to gain a minimal understanding of the multiple nomenclature systems in use during World War Two. The "alphabet soup" on equipment data plates was incomprehensible without some sort of guide. With the help of information pieces of the puzzle from friends like Robert Downs, Fred Chesson, Fred Raper, August Link, and many others, I was able to put together a fair approximation of such a guide.

2. Overview

Any militarily significant system usually has a number of component parts, each of which must be easily identifiable by a simple reference during both training and operations. The number of military systems in use makes a similar referencing scheme necessary at the system level as well. Further, it is desirable to have a nomenclature system which inherently makes it easy to distinguish between systems and components of those systems.

Three separate and independent nomenclature systems were in common use at the beginning of the war: the Army nomenclature system, the Navy model letter/type number system, and the Navy Mark/Mod system. These were joined in late 1942 by the new Joint Army-Navy (or "AN") System of nomenclature.

The Army system featured the familiar SCR, SCM, SCS designators for systems, and BC, FT, HS, etc. for system components. The Navy used a series of two and three-letter designators for systems, while using a 5-digit type number for each system component. Both of these systems appear to have been in use since World War One or earlier. A second Navy system used Mark and Mod numbers for various ordnance items such as guns and shipboard fire control radars. In that system, there appears to have been no significant attempt to distinguish systems from components. Since so little of the Mark/Mod system applies to the material we encounter in collecting, it will not be discussed further. The Joint Army-Navy Nomenclature System was implemented to cope with systems intended for multiservice use or with potential for such use, thereby ending the confusion that resulted from a single system having two radically different nomenclatures assigned by the Army and Navy (such as the IFF system the Army called the SCR-515, also known as the Navy Model ABA). Of these four systems, only the AN system and the Navy Mark/Mod system have survived.

3. Army Nomenclature System

This system was developed for Signal Corps use at least as far back as World War I. Three-letter designators beginning with "SC" were used to denote complete systems, while one and two-letter designators were used for components. Only a few system designators were used:

SCM	Set, Complete, Meteorological
SCR	Set, Complete, Radio
SCS	Set, Complete, System

The SCS designator was applied to groups of SCR-numbered sets comprising an extensive system, such as multiple radio sets employed in a ground-based fighter direction/control center. The SCR designator could be a single transmitting or receiving set, or a full set of both transmitting and receiving equipment. An additional designator, "RC" was used for subsystems or groups of accessories. This ranged from the RC-198 (the old familiar FL-8-A audio filter) to IFF systems which were intended to be used with ground or airborne radar sets carrying their own SCR designator. Each of these could have a suffix (as in the "SCR-274-N"). Some early systems, such as the SCR-183 or 283 systems, carried a variant identifier between "SCR" and the number, such as "SCR-AL-183", "SCR-AN-183", etc. The designators for equipment components were:

A Phantom Antennas
AL Aerial Communication
AN Antenna Aerials
AP Panel Sets
AR Lightning Arrestors
BA Primary Batteries
BC Basic Component (Rcvrs, Xmtrs, Control Boxes, etc.)
BD Switchboards, Power Boards, etc.
BE Cabinets, Starting Boxes, etc.
BG Bags, Cases, Fabrics, Covers, etc.
BK Circuit Breakers, Relays
BX Boxes
BZ Buzzers
C Induction Coils, etc.
CA Capacitors
CC Electrical Connecting Cords
CD Electrical Cords with Plugs
CE Animal Pack Equipment
CF Telephone (carrier)
CH Chest
CO Electrical Extension Cords
CP Cables (counterpoise)
CS Carry Case
DC Crystals & Crystal Units
DM Dynamotors
DR Wire Reel
EE Telephone, Telegraph & Signal Lamp Sets
F Fairleads
FL Filters
FM Supporting Frames
FT Fittings, Mounting, Clamps, etc.
GA Spark Gap
GC Hand Crank
GE Gasoline Engines
GN Generators
GP Ground Rods
GR Sound and Flash Ranging Set
GY Guys & Stakes
HO Shelters
HS Headsets
I Ammeters, Voltmeters, Clocks, etc.
IE Instrument Equipment
IN Insulator
IS Electrical Instruments
J Transmitting Keys
JB Jack Boxes
JK Jacks, Receptacles
K Carts, Trucks, Trailers, etc.
KE SCS Equipment (Vehicular)
LC Telephone Line Construction Tools & Apparatus
LG Legs
LM Illuminating Lamps & Bulbs
LP Loops
LS Loudspeakers
M Miscellaneous
MA Radio Mast, less Antenna
MC Miscellaneous Components
ME Maintenance Equipment
MG Motor Generator
ML Meteorological Apparatus
MO Motors
MP Mast Bases, Brackets, Clamp
MS Mast Section
P Headsets
PA Public Address Equipment
PE Power Units
PH Photographic Articles
PL Plugs
PN Mounting Panels
R Telephone Receivers
RA Rectifiers
RL Reel Mechanisms

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RM Remote Control Units
RS Resistors
RU Water Cooler
SE Signal Sets
SG Shafts & Gears
SO Sockets, etc. (Connectors)
ST Carrying Straps, etc.
SW Switches
T Telephone Transmitters and Microphones
TC Central Office Sets (wire)
TD Chest Sets
TE Tool Equipment
TF Power Transformers
TG Telegraph Instruments
TL Tools
TM Terminals, Connectors, etc.
TP Telephones (desk sets, etc.)
TR Towers
TS Handsets (wire)
TU Transmitter Tuning Units
VB Vibrators
VO Oscillators
VT Vacuum Tubes
W Wire
WC Cables

4. Navy Nomenclature System

The Bureau of Steam Engineering, created in 1910, was initially given responsibility for Navy radio equipment. This continued after they were renamed as the Bureau of Engineering and lasted until they merged with the Bureau of Construction and Repair in July of 1940, emerging as the new Bureau of Ships (BUSHIPS or NAVSHIPS). Radio systems were assigned a two-letter model designation, with the first letter indicating the type of system and the second letter indicating the specific model. ("Model RA" would have been the first receiver). Separate components of a system were assigned type designators containing a two-letter prefix for the manufacturer and a four-digit type number. The prefix "SE" was used for Navy-built equipment, and commercial designs were assigned a two-letter manufacturer designator. The first two digits of the type number indicated the component type (46 - receiver, 52 - transmitter, etc.).

Rapid growth during the period between wars soon made the old model letter and type number scheme obsolete. Lack of adequate detail obscures this process, but it appears that the new three-letter model designators and the five-digit type numbers were not implemented at the same time. As each equipment category reached the end of the available two-letter model series, they began using three-letter model designators for complete systems.

Nomenclature for both the RU-1 and RAC receivers was assigned in December of 1931, with components of both units assigned five-digit type numbers. Unfortunately, with only a single letter available to indicate the model in the most heavily-used categories such as airborne receivers and transmitters, this system was also doomed.

On the second contract for a specific model, the model designator was suffixed with "-1" (a second contract for the RAK would be designated as "RAK-1", a third contract as "RAK-2",etc.). Authorized modifications of the system by the Navy after delivery would result in addition of a lower-case letter suffix (such as RAK-1a, RAK-1b, etc.). Experimental equipment was assigned model letters beginning with "X" if manufactured by the Navy (XA, XB, etc.), or with "CX" if commercially manufactured (CXA, CXB, CXAA, CXAB, etc.). Preliminary models of equipments, intended to become the property of the Navy under the terms of a contract, were given an "X" prefix letter, separated from the basic designation by a dash. The preliminary (test) model of "Model TBU" was therefore designated "Model X-TBU".

The new type number had a prefix for the manufacturer and five or six digits ("CRV-46151" for the Model ARB receiver). The list of manufacturers had

long since outgrown the two-letter set and was rapidly using up the available three-letter designations.

It was to grow well into the four-letter series by the end of the war. Five-digit type numbers were used for major pieces of a system (transmitters, receivers, control boxes, power supplies, etc.) and six digits for subassemblies and smaller parts. The first two digits were the "class" or general type of item, and the remaining digits indicated the specific component model. A modification to the basic design would result in addition of a hyphen and upper-case letter suffix ("COL-46159-A", etc.).

Experimental components had an "X" added before the five digits ("X47101", etc.).

Wartime developments forced a modification to the type number system. Classified equipment (radar, IFF, etc.) was assigned a type number with the usual two-digit class identifier and a three-letter suffix. Any component with an alphabetic suffix in the type number was instantly recognizable as classified equipment, and should have been more easily protected.

Modified component type numbers were indicated with a numeric suffix ("CAY-50AEY-1", etc.)

One further note: Generations of postwar typists unfamiliar with either the equipment or the model/type assignment principles have thoroughly fouled up the equipment lists they retyped.

Navy Model Letter Assignment

Model **Type of Equipment**

- **A** Airborne Radio and Radar Equipment
  - **AB** Airborne IFF
  - **AI** Airborne Radar Intercept
  - **AM** Airborne Radio Transmitting and Receiving
  - **AR** Airborne Radio Receiving
  - **AT** Airborne Radio Transmitting
  - **AY** Airborne Radar Altimeters
- **B** Ship-Shore IFF Equipment
- **C** CX All Commercial Experimental Equipment
- **D** Ship-Shore Radio and Radar Direction Finding Equipment
  - **DX** Assembled Direction Finder Equipments (DF assemblies which when used with a standard receiver form a completeDF equipment.)
- **E** Emergency Power Equipment (Gasoline or Diesel engine generator sets)
- **F** Radar Fire Control Equipment ("F" series superseded by the BuOrd Radar Mark/Mod series)
  - — Subseries of "F" series in use for other than fire control radar, as follows:
  - **FP** Facsimile Recording Equipment.
  - **FQ** Facsimile Scanning Equipment.
  - **FR** Frequency Shift Receiver Converter Equipment.
  - **FS** Frequency Shift Keying Equipment.
- **G** Airborne Radio Transmitting Equipment (Classification cancelled - Reassigned "AT" series.)
- **H** Hoist Train Mechanism (Cancelled - hoist train mechanism considered as part of an equipment.)
- **I** Intercept Radar.
- **J** Sonar-Sound Listening (Receiving).
- **L** Precision Calibrating Equipment.
- **M** Radio Transmitting and Receiving Equipment. Radar Mark & Mod: Radar Fire Control Equipment.
- **N** Sonar Echo Sounding.
  - **NA** Sonar Beacon.
  - **NG** Echo Sounding (Rochelle Salt).
  - **NJ** Lightweight Echo Sounding Recording.
  - **NK** Portable Echo Sounding Recording.
  - **NM** Echo Sounding (Magnetostriction).
- **O** Measuring, Test, and Operator

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Trainer Equipments for Models OA to OCZ inclusive. For Models after OCZ, the subseries breakdown is as follows:

- **OE** Xmtr and/or Rcvr Analyzers, Vacuum-Tube Voltmeters, Volt-Ohm-Milliammeter, Multimeters.
- **OF** Echo Boxes, Wavemeters, Frequency Meters (non-precision).
- **OG** Signal Generators (non-precision), Test Oscillators
- **OK** Sonar Computers.
- **OM** Test Monitor Equipment.
- **OP** Signal and Sound Wave Measuring Equipment, Noise Meters.
- **OS** Oscilloscopes.
- **OT** Radar Operator Trainers.
- **OV** Vacuum Tube Analyzers or Testers.
- **OW** Sonar Test Equipment.
- **OZ** Impedance Measuring Equipment.

P Automatic Transmitting and Receiving Equipment Coding Equipment.

Q Sonar Echo-Ranging-Listening Equipments:

- **QA** E/R/L (Quartz).
- **QB** E/R/L (Rochelle Salt).
- **QC** E/R (Magnetostriction) with L (Rochelle Salt).
- **QD** Depth Determining Equipment.
- **QF** Teacher and Training Equipment.
- **QG** Console Version of "QC" Series.
- **QJ** Console Version of "QB" Series.
- **QK** Scanning Sonar-Crystal.
- **QL** Frequency Modulated Sonar.
- **QX** Auxiliary Equipments to Echo Ranging Sonar.

R Radio Receiving Equipment (Panoramic radio adapters were included in this class up through Model REZ).

- **RP** Panoramic Radio Adapters.

S Search Radar Equipment.

T Radio Transmitting Equipment.

TP Power Amplifiers.

U Remote Control:

- **UX** Mobile Remote Control.

V Visual - PPI Repeaters.

W Sonar - Combined Ranging and Sounding:

- **WA** Combined Sounding-Ranging (Magnetostriction).
- **WB** Combined Sounding-Ranging (Rochelle Salt).
- **WC** Combined Sounding-Ranging (R/S Sounding) (M/S & R/S Ranging & Listening).
- **WD** Combined Sounding-Ranging (R/S Sounding) (M/S & R/S Ranging & Listening).
- **WE** Combined Lightweight M/S Echo Ranging with sounding feature removed.
- **WF** Combined Ranging-Sounding-Listening (Sonic & supersonic listening using ADP crystals).

X Experimental (Navy-designed).

Y Navigation and Landing Equipment: (other than direction finders), (beacons).

Z Airborne Navigation and Landing. (Classification can celled - re assigned "AY" series).

Navy Type Number Assignment

Class **Material**

10 Miscellaneous: To be used when a definite class is not available.

14 Special RF Devices (Not covered by any other classification). (Electronic switching, etc.)

18 Prime Movers and Accessories: All types except electrical.

19 Batteries: All types; parts and accessories.

20 Rectifier Power Units - Voltage Regulators - Copper Oxide Rectifiers: All types. A20 is crystal detectors.

21 Motors - Generators - Dynamotors - Motor Generators - Rotary Converters, etc. Motor controllers.

22 Instruments - Electrical Indicating and Recording.

23 Control Panels and Control Units. (Except motor controllers.)

24 Switches: Manually operated.
25 Shields and Shielding Material: Finishes.
26 Keys - Telegraph: Manually operated.
28 Protective Devices: Static types.
29 Electromagnetic Contact Devices: All types.
30 Transformers and Reactors: Power and audio.
35 Oscillators - Complete Units (Audio or RF).
36 Ranging Equipment - Radio (Localizer, rotating beacons, etc.)
38 Vacuum Tubes - Photo-electric Cells: All types.
40 Piezo-Electric Crystals and Holders - Thermometers and Thermostats.
41 Compensators - Underwater Sound.
43 Transmitter-Receiver Units (Combined): Equipment in which the transmitter and receiver are not separable as units.
46 Receiver Units and Converters (RF to IF, etc.) - Radio and Sound.
47 RF Transformers - Inductors - Chokes.
48 Capacitors: All types.
49 Head Telephones - Telephone Cords - Patch Cords - Loudspeakers - Plugs - Jacks - Sockets - Receptacles: All types.
50 Amplifier, Modulator, and Coupler Units - Electronic Converters - Mixing Panels: All types. (Complete diplex and duplex units.) See 14 for electronic switching.
51 Microphones - Hydrophones - Underwater Sound Electrical Pickup Devices - Combination Handsets: All types.
52 Radio Transmitter Units: Includes RF drivers for underwater sound equipment, etc.
53 Filter Units: All electrical types.
54 Sound Receiving Devices - Acoustical.
55 Indicators and Recorders: Radio, radar, and underwater sound. (Indicating instruments under Class 22.)
56 Wave Propagation
59 Television - Photo - Radio
60 Test Equipment (Integral instruments under Class 22.) A60 is Training Equipment (Operator trainers and instruction devices.)
61 Insulators and Insulating Material: Phenolic and Ceramic.
62 Wires and Conductors - Junction Boxes. A62 is RF transmission lines and RF cables, etc.
63 Resistors: All types.
64 Static Recorders and Eliminators.
65 Remote Control Systems by Wire: Repeater systems, etc.
66 Antennas - Antenna Assemblies. (Dummy and phantom antennas.)
67 Automatic Systems, Facsimile, Tele-Automatic: Automatic keyers and recorders.
68 Secrecy Systems: Sending and receiving. (Speech scrambling)
69 Direction Finding Equipment: Radio.
70 Distance Finding: A70 is radio altimeters.
72 Portable Equipment - Field Sets.
73 Combined Gas Engine Generator Sets.
74 Precision Calibration and Measuring Equipment.
75 Standards: (Including standardization notices, etc.)
78 HF Underwater Sound Projector (above 10 kc) and supporting parts.
79 LF Underwater Sound Projector (10 kc or below).
83 Frequency Control Systems.
84 Control by Radio.
85 Interference Reduction.
87 Experimental Superfrequency Equipment.
88 Instrument Landing Equipments.
89 Radio Recognition and Identification Devices.
90 Visual Signalling Apparatus (This classification for type number assignments only). **ER**

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Part Two

by Ray Mote, W6RIC
3610 Oarfish Lane
Oxnard, CA 93035-1320
Internet - rmote@rain.org

5. Army-Navy Nomenclature:

I've never seen a document that gives the exact date on which this system was implemented. We can infer the approximate date from initial nomenclature assignments, beginning with the AN/ARR-1 (and AN/FRT-1) in late December of 1942. This was followed in January 1943 with assignments for the AN/ARR-2, 2X, and 3, as well as AN/ARN-1 and AN/CRT-1 components. Publications of the period made it abundantly clear that the presence of equipment with AN/-type nomenclature did not automatically mean that it was in fact used by both the Army and Navy! It only indicated that the type number was assigned in that system.

System designators were formed from the prefix "AN/", three letters specifying the installation type, equipment type, and purpose, a hyphen, a numeric designator, and possibly a suffix to indicate a modification of the basic system. For example, an "AN/ARC-5X" would be a system under the Army-Navy Nomenclature System ("AN/"), it would be an airborne ("A") installation, radio equipment ("R"), used for communications ("C"). It would be the fifth such system assigned this nomenclature ("-5"), and it would have been modified for a different input voltage, phase, or frequency ("X"). In actuality, the AN/ARC-5X was intended for 14-volt DC systems rather than the normal 28-volt equipment, and it does exist. The table of system designators gives a full description of the possible combinations of three letters for the first part of the nomenclature. Modification letters for different input voltage, phase, or frequency were restricted to "X", "Y", "Z", "XX", "YY", etc., and were to be assigned in that order. Any other modification to the basic system was to be assigned a modification letter ranging from "A" to "W", "AA" to "WW", etc.

Component nomenclature featured a one- or two-letter prefix indicating the type of component, a hyphen, a number to indicate which component model was meant, and a possible modification suffix letter. For example, the R-2A was a modification of the original R-2 receiver design in the AN/ARR-3 airborne radio receiving system. One- and two-letter prefixes are provided in the table of component designators. Note: NAVSHIPS 900,109 (Navy Type Number Book) uses "CO" for RF Cables and Transmission Lines, while CO-NAVAER 08-5Q-227 (Nomenclature List for Bureau of Aeronautics Aircraft Electronic Equipment) uses "CG" for this purpose. The Army version in War Department Pamphlet 11-3 (Signal Corps Equipment Security Classification List) also uses "CG". All three documents were published at about the same time, indicating the existence of at least some confusion about this system which was approaching its third birthday.

It was possible to specify both the component and the major system for complete identification. For example, the R-2A full specification would have

been "R-2A/ARR-3". This would be read as modification of receiver number two, part of (or used with) system AN/ARR-3. (The slant bar between the component portion and system portion of the description was read to mean "part of, or used with".) Some descriptions stop short of this point by giving only the three-letter generic designator after the slant bar. This was done to indicate that the component might be used with more than one system of that generic type (R-295/ARR, etc.).

Experimental sets carried an experimental designator enclosed in parentheses, composed of a two-letter originating agency designator, a hyphen, and the experimental model number. For example, AN/ARC-3(XA-1) would designate airborne radio communications set number three, experimental model number one, built by the Aircraft Radio Laboratory. These two-letter agency designators are also shown in a table below.

System Designators:

Installation

A- Airborne
C- Air Transportable
F- Ground, fixed
G- Ground, general use
M-Ground, mobile
P- Ground, pack or portable
S- Shipboard
T- Ground, Transportable
U- General Utility
V- Ground, Vehicular

Purpose

A - Auxiliary Assemblies
C- Communications
D- Direction Finder
G- Gun Directing
L- Searchlight Control
M- Maintenance and test assemblies
N- Navigational Aids
Q- Special, or combination of types
R- Receiving
S- Search and/or detecting
T- Transmitting
W- Remote Control
X- Identification and Recognition

Type of Equipment

B- Pigeon
C- Carrier (wire)
F- Photographic
G- Telegraph or teletype (wire)
I- Interphone & public address
M-Meteorological
N -Sound
P- Radar
R- Radio
S- Special Types or combination
T- Telephone (wire)
V- Visual and light
X- Facsimile or Television

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Experimental Sets: Originating Agency:

XA - Aircraft Radio Laboratory
XC - Camp Coles Signal Laboratory
XE - Camp Evans Signal Laboratory
XM - Fort Monmouth Signal Laboratory
XN - Navy
XO - Eatontown Signal Laboratory
XP - Army Pictorial Service
XR - NDRC - Division 14
XT - Toms River Signal Laboratory

Component Designators:

AB - Antenna Supports (Bases)
AM - Amplifiers
AS - Antenna Assemblies or Systems
AT - Antennas (Simple)
BA - Battery, Primary Type (Dry)
BB - Battery, Secondary Type
BZ - Audible Signal Device
C - Control Articles
CG - RF Cables and Transmission Lines
CK - Crystal Kits
CM - Comparators
CN - Compensators
CO - RF Cables & Transmission Lines
CP - Computers
CR - Crystal Units
CU - Coupling Units
CV - Converters (electronic)
CW - Covers
CX - Cords
CY - Cases
DT - Detecting Heads
DY - Dynamotors
F - Filters
FN - Furniture
G - Generators (see PU)
GO - Goniometers
GP - Ground Rods
H - Head, Hand, & Chest Sets
HD - Air Conditioning Apparatus
ID - Indicators
IL - Insulators
J - Junction Units
KY - Keying Devices
LC - Line Construction Tools
LM - Lamps
LS - Loudspeakers
M - Microphones
MD - Modulators
MK - Maintenance Kits or Equipments
ML - Meteorological Apparatus
MT - Mountings
MX - Miscellaneous
O - Oscillators
OA - Operating Assemblies
PF - Pole Fittings
PG - Pigeon Articles
PH - Photographic Articles
PP - Power Supplies
PT - Plotting Equipments
PU - Power Equipments
R - Radio & Radar Receivers
RD - Recorders & Reproducers
RE - Relay Assemblies
RF - Radio Frequency Units
RG - Bulk RF Cables & Transmission Line
RL - Reel Assemblies
RP - Rope & Twine
RR - Reflectors
RT - Receiver and Transmitter
S - Shelters
SA - Switching Assemblies
SB - Switchboards
SM - Simulators
SN - Synchronizers
ST - Straps
T - Radio & Radar Transmitters
TA - Telephone Apparatus
TD - Timing Device
TF - Transformers
TH - Telegraph Apparatus
TK - Tool Kits or Equipments
TL - Tools
TN - Tuning Units
TS - Test Equipments
TT - Teletypewriter & Facsimile Apparatus
U - Audio & Power Connectors
UG - RF Connectors
V - Vehicles
VS - Visual Signaling Equipments
WD - Two-Conductor Cable
WF - Four-Conductor Cable
WM - Multiple-Conductor Cable
WS - Single-Conductor Cable
WT - Three-Conductor Cable

6. Confusion Factors:

There are a number of aspects of the three nomenclature systems, the way they were implemented, and the effects of wartime events, that can be very confusing. First, you will find a mixture of two or more nomenclatures in the same system! There was at least one Army radar, SCR-296-A, that included a Navy LF. strip, CAOS-50AEY (see Modification Work Order 11-1505-1). Additionally, various AN nomenclatured systems contained either Army nomenclature or Navy nomenclature components.

Model or component numbers can provide confusion in a variety of ways. For example, if someone offers you an "ARC-1", is he describing the AN/ARC-1 VHF transceiver or the Navy Model ARC-1 countermeasures receiver? Additionally, commercial manufacturers were fond of assigning "R-xx" or "T-xx" model numbers to their transmitters and receivers. Then we have the famous Aircraft Radio Corporation, with their ARC Type 12 and ARC Type 15, etc. systems. The Navy type numbers were sufficiently weird to preclude most confusion problems, but did you know that there are 21 identical component prefixes in the Army and AN systems? Fortunately, eleven of these (BA, BZ, GP, LC, LM, LS, ML, PH, RL, ST, and TL) are essentially the same in both systems. The rest (C, CO, CP, F, J, M, R, T, TD, and TS) have radically different meanings in the two systems, and you'd better watch out.

Even in a single service model, multiple manufacturers can confuse the issue. Your BC-348-J, N, or Q was made by Wells Gardner. Others, such as the E, M, P, or S would have been made by a different manufacturer, and will have different schematics and tube lineups. The same warning applies to a number of Navy receiver models. In this case, it pays to get the manufacturer's code prefix, as well as the rest of the Navy type number. In some listings of type numbers, even the Navy left blanks in front of the type number due to the large number of contractors involved.

Worse yet, the horse-trading between services over priorities at various plants led to Army and Air Corps use of Navy radio models and vice versa. As if that weren't bad enough, one look at an equipment listing for either service shows a fairly large number of commercial models in use, in addition to all the military gear. This is particularly evident in aircraft installations and in test equipment, where names like Bendix, RCA, Dumont, and General Radio keep cropping up. Even the venerable Hallicrafters S-27 did its bit as a countermeasures receiver, first for the British, and later in American "ferret" aircraft making electronic intelligence flights over enemy territory.

7. Conclusions:

Although all three nomenclature systems individually met the basic objectives stated in the beginning of this article, they were not without weaknesses. All nomenclature systems are weakened by both intentional misuse and unintentional errors in assignments. The former must be prevented, but we will have to live with the latter. The Army system was relatively robust, but had several category pairs (such as I and IS) where reasonable confusion could exist as to the correct category to use. The old two-letter Navy model system was incapable of coping with wartime expansion, in terms of a great many additional models.

The three-letter Navy system was no better in a few areas, notably those involving airborne systems. (A single letter limited the system to no more than 26 models.) The AN system appears to be the most robust, in terms of expansion and flexibility, and this is proved by its survival.

There is one more aspect that has not been thoroughly explored. It involves

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filaments in parallel and replaced the 12-volt tubes with their 6-volt equivalents to match the then-standard car battery voltage. Some users replaced the 6SK7 with a 6AC7 tube in the RF stage. This high-transconductance pentode made a dramatic improvement in ten-meter sensitivity. One could also use a converter ahead of the car's broadcast-band receiver. But such converters cost as much or more than the BC-455 job. And quite often the automobile of beginning hams did not sport the luxury of a BC car radio.

Back then, one had to convert 6 volts DC from the car battery into hundreds of volts for the tube's plates. This could be done with a vibrator power supply, whose current output was quite limited. Or one could use a dynamotor, a generic term for a DC high-voltage generator that was motor driven from the car battery. The surplus PE-103 was the most popular unit at the time. It was cheap, and it provided both 150 and 500 volts, ideal for powering both a mobile receiver and transmitter. Experience quickly taught users that an extra 6-volt car battery tied in parallel with the car's own battery would insure against a silent starter motor. This was especially true if much time was spent listening without the car's engine running. On transmit, the PE-103's whine would lug down under the extra load. Even with the extra battery, one didn't make long transmissions before again starting the car's engine to produce a recharge.

That Saturday night on Signal Hill, everything remained charged. In the quiet night, contacts were made. When it was time to go, the car started with no problems. It's fun to think back on that time, when many of today's ham senior citizens were first active on the bands. That early ten-meter experience will always live in memory for those who were there, especially for those who did it mobile. ER

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dual assignments of both Army nomenclature and British Air Ministry "reference numbers" to quite a few systems. Airborne radio, radar, and IFF systems in particular carry both the Signal Corps tag and a cute little red tag with a crown and Air Ministry reference numbers. As far as I know, no one has ever come up with a cross-reference list of these numbers. If you have this type of information, I'd sure like to know about it!

Now that you know the nomenclature systems, where do you find listings of the equipment? (I'll give you a hint -- they're far too lengthy to publish here.) I'd recommend the Antique Wireless Association's annual "AWA Review": Volume 6 has Fred Chesson's list of Army-nomenclature equipment, Volume 7 has Fred's list of the Navy manufacturer's codes (which the Army also used), and Volume 8 contains a pretty good list of the Navy models. The Navy type number list runs about 1600 pages, and is not for sale anywhere I've looked. Additional information on Army equipment can be found in Army TM 11-227 (a directory of radio gear), TM 11-486 (Communication Systems Engineering), and TM 11-487 (Communication Systems Equipment). SHIPS 275 (Navy Catalogue of Radio Equipment) is available from New Wireless Pioneers at (716) 681-3186.

Good luck, and good hunting. If this has helped you, my work will have been worthwhile. I hope to publish an article on the technical manual numbering systems of the Army, Air Corps, Bureau of Ships, and Bureau of Aeronautics in the near future. Unfortunately, lists of BuShips publications are hard to find and I'll need help from "out there". ER

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